

## CLAIMS

**Please amend the claims as follows:**

1. (currently amended) A system for designing a communication link for use in a data processing system, said system comprising:

a parameter generator configured to permit a user to specify a first set of parameters associated with the communication link and further configured to derive a set of internal parameters associated with the communication link from the first set of parameters;

an internal link model comprising a set of configurable link cells, wherein the internal link model is configured to receive the derived set of internal parameters and to instantiate each link cell in the set of configurable link cells based on the set of internal parameters; [[and]]

means for modeling a bit error rate (BER) of the ~~instantiated~~ communication link based upon the instantiated set of link cells; and

means for presenting at least one characteristic of the modeled communication link to the user.

2. (currently amended) The system of claim 1, further comprising an estimator configured to estimate the area and power consumption based on the user-specified first set of ~~first~~ parameters.

3. (currently amended) The system of claim 1, wherein the means for modeling the BER includes:

a channel simulator configured to receive the instantiated set of communication configurable link cells from the parameter generator; and

a media transfer function specified by the user, wherein the media transfer function is indicative of a channel to which the instantiated set of configurable link cells ~~model~~ is connected.

4. (currently amended) The system of claim 1, wherein the parameter generator prevents the user from directly accessing the set of internal parameters and the internal ~~generic~~ link model.

5. (original) The system of claim 1, wherein the first set of parameters includes link design parameters selected from a set of parameters comprising a sampling complexity parameter, a

loop bandwidth parameter, and a loop order parameter.

6. (currently amended) The system of claim 1, wherein the set of configurable link cells in the internal generic link model includes a sampling latch cell having a configurable sample rate and a sample memory having a configurable memory size.

7. (currently amended) The system of claim 6, wherein the set of configurable link cells in the generic internal link model further includes an edge detector, a phase controller, and a phase rotator, each having at least one configurable parameter.

8. (currently amended) The system of claim 1, wherein the power supply voltage is a configurable parameter of the internal generic link model.

9. (currently amended) The system of claim 1, wherein the system is ~~further~~ configured to permit the user to specify a first operational parameter and an acceptable limit for a second operational parameter, and ~~still to configure~~ to instantiate each link cell to obtain an optimal value for the first operational parameter link constrained by the second operational parameter.

10. (currently amended) A computer program product comprising:

~~a computer executable code, stored in a~~ tangible computer readable medium[,];

program code, within the computer readable medium, for designing a communication link for use in a data processing system, said program code including ~~comprising~~:

parameter generator ~~computer~~ code means for permitting a user to specify a first set of parameters associated with the communication link and further for deriving a set of internal parameters associated with the communication link from the first set of parameters;

~~computer~~ internal link model code means for modeling an internal link comprising a set of configurable link cells, wherein the internal link model code means ~~are is~~ configured to receive the derived set of internal parameters and to instantiate each link cell in the set of configurable link cells based on the set of internal parameters; and

~~computer~~ bit error rate (BER) modeling code ~~means~~ for modeling a bit error rate (BER) of the instantiated set of configurable link cells ~~communication link~~; and code for presenting at least one characteristic of the communication link to the user.

11. (currently amended) The computer program product of claim 10, further comprising code ~~means~~ for estimating the area and power consumption based on the user-specified first set of first parameters.

12. (currently amended) The computer program product of claim 10, wherein the BER modeling code ~~means for modeling the BER~~ includes:

[[a]] code ~~means~~ for receiving the instantiated set of configurable link cells ~~communication link~~ from the parameter generator; and

a media transfer function specified by the user, wherein the media transfer function is indicative of a channel to which the instantiated set of configurable link cells ~~model~~ is connected.

13. (currently amended) The computer program product of claim 10, wherein the parameter generator code ~~means~~ prevents the user from directly accessing the set of internal parameters and the ~~generic~~ model of the internal link model.

14. (original) The computer program product of claim 10, wherein the first set of parameters includes link design parameters selected from a set of parameters comprising a sampling complexity parameter, a loop bandwidth parameter, and a loop order parameter.

15. (currently amended) The computer program product of claim 10, wherein the set of configurable link cells in the internal link model includes a sampling latch cell having a configurable sample rate and a sample memory having a configurable memory size.

16. (currently amended) The computer program product of claim 15, wherein the set of configurable link cells in the internal ~~generic~~ link model further includes an edge detector, a phase controller, and a phase generator, each having at least one configurable parameter.

17. (currently amended) The computer program product of claim 10, wherein a power supply voltage is a configurable parameter of the internal generic link model.

18. (currently amended) The computer program product of claim 10, further comprising:

code ~~means~~ for permitting the user to specify a first operational parameter of the communication link; and

code ~~means~~ for determining values of the internal parameters to optimize the a first ~~second~~ operational parameter of the link constrained by the second operational ~~first~~ parameter.

19. (currently amended) A method of providing a service permitting a user to define a communication link suitable for use in a data processing system, said method comprising:

defining an internal model of a generic communication link, the internal model comprising a set of configurable ~~communication~~ link cells;

enabling the user to specify a first set of parameters associated with the communication link while preventing the user from accessing the internal model;

providing means for converting the first set of parameters to an internal set of parameters; and

providing means for using the internal parameters to configure the an internal model of the communication link.

20. (currently amended) The method of providing a service of claim 19, wherein:

enabling the user to specify a first set of parameters includes enabling the user to specify a first operational parameter and a second operational parameter; ~~and further wherein~~

providing means for using the internal parameters to configure the an internal model includes providing means for configuring the internal model to obtain an optimal value for the first second operational parameter ~~link~~ constrained by the second first operational parameter.

21. (currently amended) The method of providing a service of claim 19, further comprising providing means for simulating a bit error rate of the communication link.

22. (currently amended) The method of providing a service of claim 21, further comprising providing means for estimating die size and power consumption of the communication link.